



Publicaciones recientes Métodos numéricos, cómputo paralelo y optimización.

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Rionda,

C. Segura, J.C. Castillo, O. Schütze, "The Importance of Diversity in the Variable Space
in the Design of Multi-Objective Evolutionary Algorithms", Applied Soft Computing
136, 2023.

O. Hernández Constantino, C. Segura, "A parallel memetic algorithm with explicit
management of diversity for the job shop scheduling problem", Applied Intelligence
52 (1), 2022.

I. de J. May-Cen, F. J. Hernandez-Lopez, R. Legarda-Sáenz, & C. Brito-Loeza, "Parallel
algorithm for wrapped phase denoising", Journal of Real-Time Image Processing,
20(4), 2023.

F. J. Hernandez-Lopez, O. Muñiz-Pérez, "Parallel fractal image compression using
quadtree partition with task and dynamic parallelism", Journal of Real-Time Image
Processing 19(2), 2022.

Edgar Fuentes Figueroa and Oscar Dalmau. "Transportless conjugate gradient for
optimization on Stiefel manifold." Computational & Applied Mathematics 39.3, 2020.

Harry Oviedo, Oscar Dalmau and Rafael Herrera. An accelerated minimal gradient
method with momentum for strictly convex quadratic optimization. Bit Numer Math
62, 591–606, 2022.

Trejo-Sánchez, J. A., Sansores-Pérez, C. E., García-Díaz, J., & Fernandez-Zepeda, J. A.
. "Approximation Algorithm for the Minimum Hub Cover Set Problem". IEEE Access,
10, 51419-51427, 2022

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J. L., & Flores-Lamas, A.. "A fast approximation algorithm for the maximum 2-packing set problem on planar graphs". Optimization Letters, 17(6), 1435-1454, 2023

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez, Numerical simulation of direct methanol fuel cells using computational fluid dynamics. International Journal of Hydrogen Energy, 2024.

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez,, A Reaction-Convection-Dijusion Model for a PEM Fuel Cell. Finite Elements in Analysis & Design, 201, 2022.

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez, A Self-Validating Method via the Unification of Multiple Models for Consistent Parameter Identification in PEM Fuel Cells. Energies, 15, 2022.

L. Blanco-Cocom, S. Botello-Rionda, L.C. Ordoñez, S.I. Valdez, Robust parameter estimation of a PEMFC via optimization based on probabilistic model building, Mathematics and computers in simulations, 185, 2021.

M.A.Gil-Rios, I. Cruz Aceves, A. Hernández-Aguirre, E. Moya-Albor, "High-dimensional Feature Selection for Automatic Classification of Coronary Stenosis using an Evolutionary Algorithm", Diagnostics, 14(3), 268, 2024

S. Botello-Aceves, A. Hernández Aguirre, S. Iván Valdez: The Directed Multi-Objective Estimation Distribution Algorithm (D-MOEDA). Mathematics and Computers in Simulation, 214: 334-351, 2023.

Ansel Y. Rodríguez-González, Ramón Aranda, Miguel Á. Álvarez-Carmona, Angel Díaz-Pacheco, and Rosa María Valdovinos Rosas, "X-FSPMiner: A Novel Algorithm for Frequent Similar Pattern Mining". ACM Trans. Knowl. Discov. Data 18, 5, <https://doi.org/10.1145/3643820>, 2024.

A. Diaz-Pacheco, M. A. Álvarez-Carmona, A. Y. Rodríguez-González, H. Carlos, R. Aranda. Measuring the Dijerence Between Pictures from Controlled and Uncontrolled Sources to Promote a Destination. A Deep Learning Approach, International Journal of Interactive Multimedia and Artificial Intelligence, <http://dx.doi.org/10.9781/ijimai.2023.10.003>, 2023.

